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STATISTICAL

AND

GEOGRAPHICAL REPORT

OF THE

DISTRICT OF BANCOORAH.

by
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STATISTICAL AND GEOGRAPHICAL REPORT OF THE DISTRICT OF BANCOORAH.

GEOGRAPHICAL POSITION.—The District of Bancoorah, formerly known by the name of "Jungle Mehals," or "West Burdwan," and so designated in old Maps, lies between the parallels of 22° 23′ and 23° 33′ of north latitude, and the meridians of 87° 01′ and 87° 47′ of east longitude. It takes its present name from that of the Civil Station of Bancoorah or Bakoondah situated on its western boundary.

EXTENT.—The extreme length of the District from north-west to south-east is fifty-three and a half miles, and breadth from north-east to south-west forty-two miles, the contained area being 1,348·975 square miles, or 863,343·75 British acres

BOUNDARIES.—It is bounded on the north, by the River Damooda, separating it from the Burdwan District in that direction; on the east, by the Districts of Burdwan and Hooghly; on the south, by those of Hooghly, Midnapoor, and Pooroolia; and on the west, by that of Pooroolia.

REVENUE DIVISIONS.—The whole District comprises but one Pergunnah, that of Bishenpoor, so called from the city of that name, once its capital and situated nearly in its centre.

SUB-DIVISIONS.—It is sub-divided into the following Mehals or Estates:—

* 1*st.* Pergunnah Bishenpoor.	6*th.* Talook Pachulla.
2*nd.* „ Barohazaree.	7*th.* „ Jamlara.
3*rd.* „ Kureesoonda.	8*th.* Pergunnah Malliarah.
4*th.* Turruf Jungle Mehal.	9*th.* „ Shahajora.
5*th.* Talook Koochiyakore.	10*th.* Kismut Shahajora.

These are sub-divided into 495 smaller mehals, and these again comprise 3,059 village hulkas, that being the number into which they were divided by the Revenue Survey during its operations. Some of these hulkas, however, contained two or more villages, their lands being so interlaced with each other as to render separate village demarcation impossible.

JUDICIAL DIVISIONS.—The Circuit of the Judge of Bancoorah is divided into (6) six Moonsiffs' Circles, *viz.*, Barjorah, Sonamookhy, Onda, Bishenpoor, Kotulpoor, and Radhanuggur, with Head-Quarters at the towns of those names. The last Circle, however, is in the Pooroolia District.

CRIMINAL DIVISIONS.—The District is divided into seven Thannahs and five Pharees or Police Chowkies, included as follows:—

Thannah Names.	*Police Chowkies contained.*
1. Bancoorah	Civil Station Head-Quarters
2. Gungajoleghattee	North-West Circle; one at Barjorah.
3. Sonamookhy	North centre; one at Patosayer.
4. Indas†	North-East.
5. Onda	South-West.
6. Bishenpoor	South; one at Tillisayor and one at Joypore.
7. Kotulpoor	South-East; one at Baksebagan.

CLIMATE.—The climate is much drier and more healthy than that of Eastern Bengal. From the middle of March to the beginning of June hot westerly winds prevail; the heat during the day time is then very oppressive, and the Thermometer in tents under good shade ranges as high as 110° to 115° Far. These westerly winds generally die away during the afternoon, after which a cool breeze sets in from the south about sunset, and lasts until early morning, when another lull ushers in the scorching westerly breeze again. North-westers are also frequent during these months, and help to mitigate the excessive heat of the day. They are accompanied by more thunder and lightning, but far less rain than is observed with such storms further to the eastward. Indeed, they often pass over without any rain-fall. In such cases the thunder and lightning and the force of the wind are excessive.

During the rains which set in in June, and last until the middle of September, the climate is very pleasant. It is cooler, and not so damp and heavy as in Bengal generally at the same season of the year. The cold weather is also far more bracing and enjoyable; the air is very clear, and fogs are rarely seen

ASPECT.—To the south and east of the District the country is low and flat, presenting the appearance of the ordinary paddy lands of Bengal. But to the north and west it gradually rises and becomes undulating. Rocks crop out, and small knolls, covered with boulders and scrubby jungle, make their appearance and diversify the monotony of the scene. Paddy lands and swamps give way to large tracts of low thorny jungle, or dwarf Sakooa

* NOTE.—These are taken from the list in the Collectorate. Though certain of these Estates have the name "Pergunnah" prefixed, they are not Pergunnahs properly so called.

† Indas Thannah is in the Burdwan Criminal Circle.

NOTE.—These are the new Thannah Circuits as arranged by Major W. Sherwill, Boundary Commissioner. The old ones differed somewhat: they contained also many Ghatwallee Chowkies which have all been abolished.

Four other Thannahs are also included in the Jurisdiction of the Magistrate of Bancoorah, *viz.*, "Chatna," "Senpaharee," "Raneegunge," and "Nimutpore," but these are all situated outside the District of Bancoorah.

(Shorea robusta) shrubs, interspersed in some parts with trees of larger growth. The close-packed, hog-backed huts of the jungly villages of Bengal gradually merge into the mud walls and straight roofs common to the Sonthal clearings, and the north-west, until crossing the western boundary and entering Pooroolia, hills and forests, rocks and mountain streams, and small scattered hamlets take their places in the landscape, and the busy scenes of the fertile plains of Bengal change into the solitude and wildness of her forests.

Geological Structure.—Viewed by itself there is perhaps but little to interest the Geologist in this District. But taken in its intimate connection with the alluvial plains of Bengal, and the Tipperah and Pooroolia Hills to the east and west, the formation is a link in the chain by no means devoid of interest. In by-gone days it is probable that these low undulating uplands formed the sea-coast, or, earlier still, were buried beneath its waters; and that between them and the Hills of Tipperah lay a wide-spread open bay that, as time rolled on, they were slowly, but gradually, upheaved, and the Ganges, the Brahmpootra, and other minor streams, bringing down their yearly loads of deposit, formed islands in the bay between them, similar, perhaps, to the present Soondurbuns formation, which were soon covered with grass, reeds, and low jungle; that the continuously increasing deposits raised and knitted these together in larger masses, on which forest trees eventually made their appearance, consolidating and protecting them still more; that so they went on accumulating and spreading until they and the main land formed one tract, and formed the present fertile plains of Lower Bengal.

Mr. Oldham, Professor of Geology, in the third part of the first volume of the Geological Survey of India, thus speaks of this District and its adjoining ones, Midnapoor and Orissa:—

"We may probably infer that the condition of the whole District before the present deltas commenced forming was a region, or (if, as is highly probable, it were subaqueous) a sea bottom, formed by an undulating surface of rock, from which arose numerous rocky islands, large and small, themselves the relics of a former denudation.".

Again, after personally visiting this District, he thus describes its principal Geological features in his Report to Government.

Speaking of the metamorphic rocks found in it, coupled with those in the country to the westward, which is covered with "gneissose rocks," and of which those of Bancoorah form only a few of the "projecting head lands," and in the absence of any good knowledge of the geography of the western Districts, and in comparative ignorance, as yet, of its geological structure, he deems it both "impracticable and useless to attempt any thing more at present than briefly to indicate the general structure and arrangement of these rocks."

He then proceeds to notice them thus:—

Manjia Hill.—"The great fault, which marks the southern boundary of the coal fields of the Damooda, passes immediately south of Manjia or Medjia Hill, just outside the north-western limits of Bancoorah District. In the northern portion of this District, and across towards Malliarah, the rocks stand up boldly in well marked ridges or bands, the prevailing character of which is hornblendic, associated with granitoid gneiss. Strong massive runs of the hornblendic varieties stretch across the country in tolerably continuous lines; the general strike of these is nearly east and west, or a little to the north of east. Many of these runs are very highly crystalline. They are traversed by granite veins. The more felspathic varieties have yielded to decomposition more readily than the others, and are generally coincident with slight depressions in the general surface, in which deposits of clay and sandy clay with kunkur are not unfrequent. The rocks all appear to dip to the north at high angles."

Trap Dykes.—"Two or three small and badly seen trap dykes are observed cutting across these rocks and heading a little to the west of north. They are in no case of any great width, and appear to have exerted a very trifling reaction on the adjoining rocks."

Granite.—"Near to Ramchunderpore and the "Damooda" there is a considerable area of curious granitite rock, composed of quartz and felspar (white) with imbedded crystals (always twins) of a second felspar of a leaden grey color. It looks very massive, but continues to the west associated with the hornblendic rocks. It occurs in great rounded bosses which have a marked character and curiously spotted aspect from the darker imbeded crystals. Highly felspathic and rapidly decomposing gneiss is associated, and some beds of hard quartzose granular rocks."

Koro Hill.—"The same prevailing hornblendic character of the rocks, some of the masses or beds, having even a diallagic character, continues southwards to the small Hills of Kora or Koro. This Hill is sharply scarped to the north and west, and on those sides stands up boldly from the flat country around; but on the east it descends gradually into the general level. It is composed entirely of a granular quartzite of light greyish white color arranged in flaky or flag-like masses, or layers, more like a thin bedded indurated sandstone than ordinary gneiss. These flaky layers are nearly vertical, underlying about 10° to the north. The rock is in thin layers not more than a few inches thick, all adherent, but very easily detached." * * * * * *

Probable Fault.—"This small Hill of Koro is exactly in the same line as the more marked rise of Susinia to the west in Pooroolia; and it may not improbably be connected with some line of faulting or disturbance, which may be traceable when the country to the west is examined. There is a marked change in the direction of the rocks north and south of this line, which seems to confirm such a supposition. The quartzose gritty rock of Koro is to a limited extent used by the people in the neighbourhood for quern stones, curry-stones, &c.*"

Granite Veins.—"Close to Koro Hill on the south-west hornblendic schists occur, traversed by numerous veins of pegmatitic granite, all of which have a common direction west south-west to east north-east, and similar veins occur even more abundantly a little further to the south. They seldom exceed one foot in width, and are frequently not more than a few inches thick, but they may often be traced for hundreds of yards, the fleshy white

* Note.—"It is similar in composition, &c., to the stone sold in Calcutta as Burdwan paving stone, which is, I believe, all derived from near Susinia Hill to the west. Koro Hill stands close to an excellent road and within a short distance of the present terminus of the Railroad at Raneegunge, and the stone from it could be very economically obtained."

Mr. Oldham.

color of the felspar contrasting strongly with the dark greyish green of the decomposing hornblendic rocks about They form frequently a little sharp ridge, and look like a great white cable stretched along the surface. Schorl is abundant in them, frequently constituting more than a third of the whole mass, and with a pinkish felspar in large crystalline masses, and pure quartz, forms the entire rock."

"Near to a small village called Kendbursa, a little west of Gungajoleghattee, there is seen a thick vein or dyke of porphyritic green stone which runs north-west. It is nearly sixty feet wide."

CHANGE IN STRIKE.—"To the south of Koro Hill the gneissose rocks, which to the north had exhibited a prevailing strike to a little north of east, all have their strike well marked to a little west of north, and are more quartzose. Obscurely seen trap dykes traverse them near "Moheshpoor" and "Chandpoor." The rocks become markedly hornblendic and with granite veins very similar to those noticed above as we approach the town of Bancoorah by Poorunderpoor and towards Kussuriah. To the east the gneiss becomes gradually covered up with laterite masses and coarse sandy clays."

BANCOORAH.—"In the town of Bancoorah itself, and to the west of it, gneiss is abundantly seen, shewing in the same way as is common over the country in great rounded bosses the tops of swelling masses which just peep through the more recent deposits of lateritic and gravelly character."

EPIDOTIC GRANITE.—"South of Bancoorah veins of epidotic granite may be traced cutting through the gneissose rocks and heading nearly east and west. And here and there, along the western boundary of the District of Bancoorah, gneissose and hornblendic rocks may be seen shewing just beneath the surface of the ferruginous gravel and laterite clays which there prevail"

SELYE STREAM —"In the Selye Nuddee at the south-west corner of the District the rocks are well exposed; there they are seen to be much disturbed, and cut up by many irregular veins of granite. This granite along the edges in highly micaceous, the mica being in large crystalline masses of whitish color. Felspar is also abundant, and schorl locally so, but not equally distributed. The beds of the gneiss strike nearly north and south, dipping to the west at 85°. On the whole they are hornblendic, but are intercalated with many thin seams of gneissose and granitoid character, and also some thicker beds of hornblendic rocks. The granite veins cut across the beds, or occasionally pass along the strike for a little way, in a most capricious way." * * * * *

'These gneiss and hornblendic rocks continue into the District of Poorcolia.

LATERITE, &c.—"Although the lateritic and associated rocks or sands and gravels nowhere within the limits of the District of Bancoorah assume the same importance as more to the south in Midnapoor or Orissa, they still constitute a very marked feature." * * * *

The laterite gravels have all the appearance, says Mr. Oldham, 'of being the result of the decomposition and re-arrangement of the true massive laterite"

"These ferruginous gravels in some places seem to pass by almost imperceptible changes into the solid laterite, and in a few instances have become recemented into a mass not easily distinguished from that rock, and which, in fact, has been and would be called laterite; while, on the other hand, they pass by equally insensible gradation into a coarse sandy clay containing only a few of the ferruginous nodules of the laterite sparsely disseminated and barely sufficient to give a red tint to the whole. In this case also kunkur, that is calcareous kunkur, or gootin, is frequently associated * The two extremes, of a sandy clay full of kunkur, and with nodules of laterite, few and sparse, and of a gravelly rock composed almost exclusively of ferruginous nodules, similar to those which constitute the massive laterite, pass into each other, and it is impossible to draw any marked line of separation."

"That this sandy clay and gravel, often ferruginous, often calcareous, is a more recent and a more widely extended deposit than the true massive laterite is undoubted." * * * *

EXTENT OF LATERITE —"In the northern part of the District of Bancoorah this laterite does not cover any great area between the alluvial flats along the River Damooda on the one hand, and the gneiss on the other. It is seen near Barjorah and Shaharjorah; southwards near Kharaty, resting on gneiss; and in thin patches of no great extent nearer to the town of Bancoorah. In the higher and more broken grounds extending to Soonamo khy and the Dalkissur, it is seen covering the greater part of the swelling, coppice-covered ridges, for the most part gravelly in its character, but here and there forming thick, solid, and massive beds. ("Bursinghee, Choora-Mussens, Radhanuggur, Puttramara, Kurwan, Ram-band, &c.") Towards the west it becomes thinner and less marked, and gradually more mixed up with the debris of the gneiss."

"The flats of the Dalkissur now intervene, and south of this stream laterite again shews, forming similar long, low, swelling ridges of broken ground and covering the greater portion of the District extending from Bancoorah, south of Bishenpoor to Baniapokur, and so passing into the District of Midnapoor."

POINTS OF INTEREST.—"There are two or three points of interest connected with the mode of occurrence of this "laterite" which deserve a brief notice In every case within Bancoorah, where it has been seen, it is detrital; that is, it contains pebbles of quartz, and often of other rocks also, but chiefly of quartz. Not unfrequently these imbedded pebbles, and fragments increase in number, until the rock becomes a coarse ferruginous conglomerate. This, however, in most cases, occurs under circumstances which lead to the supposition that it is only the re-aggregation of the surface debris of laterite rocks and other matters; and that it is, therefore, of a more recent formation than the great mass of laterite itself. This conglomerate has a peculiar aspect from the fact that the imbedded quartz fragments are generally of clear glassy quartz, the peculiar lustre and transparency of which contrast strongly with the deep, dull red of the ferruginous matrix. Layers of sandstone frequently occur with this conglomerate, irregular in their development and arrangement."

"Apparently associated with these laterite deposits there are seen in Bancoorah, in one or two places, thinly bedded sandy shaley layers of an ochrey tint and earthy texture, some feet in thickness here and there, but having apparently no extension. These are well seen at the east end of the great tank near Bishenpoor, and further to the east on the road between that and Baniapokur. At first sight these would be taken for small remaining portions of a more widely extended series of beds, different from the laterite, but they seem rather to be instances of the local occurrence of a more earthy, and regular deposit in the midst of the general gravel-like laterite around."

GRAVEL BEDS —"Near Sonamookhy, to the east, this recent conglomerate, which forms an upper cake-like coating where the lateritic rocks occur, rests upon a bed of loose quartz pebbles forming a coarse clean gravel. Most of the pebbles are well rounded, some of them being as big as a man's head. The same or a similar bed of coarse loose quartz gravel is seen again South Birsingha (about two miles south.)

GNEISS DEBRIS IN LATERITE —"Another point of interest connected with these laterite deposits is this, that in proportion as we approach the gneiss rocks to the west, in the same proportion do the number and size of the fragments of quartz, felspar, and other debris of those rocks increase, clearly indicating the source from which such have been derived."

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* NOTE—The nodular ferruginous rock, which most Geologists would call laterite, is generally known to the people of this District as *kunkur* or "*Iron kunkur*," while the calcareous concretions, which are so common and so universally used as the source of lime, and which a Geologist would call "kunkur," are universally known as "gootin."

MR. OLDHAM.

"The laterite itself gradually thins out, as noticed above, and dies away towards the west, becoming broken up into isolated patches of smaller and smaller extent and thickness until at last a few loose blocks may be the only trace of its former occurrence. On the other hand the deposit becomes more continuous and thicker towards the east until it is covered up by the clays."

"Over these lateritic rocks there is widely spread a sandy clay often itself composed to a large extent of the small rounded nodular concretions of the laterite, and passing from this into an ordinary sandy clay with kunkur (calcareous) In this also the relative amount of those lateritic nodules steadily increases as the lateritic masses are approached. These older alluvial deposits are often of considerable thickness, but have not, in Bancoorah, by any means so great a development as in Burdwan to the north, or Midnapoor to the south." * * * *

"One of the most remarkable features about this curious rock (laterite) is the extraordinary regularity or uniformity in the size of these small nodular concretions or rounded masses. Few of them are so much as one inch in diameter the prevailing size being from one-half to three quarters of an inch, but over many square miles of such a deposit it would be almost impossible to discover a single nodule double this average size."

"Frequently this détrital or nodular laterite is like a loose gravel, each nodule being separate and free, but not uncommonly it has been cemented into a solid mass, which can be quarried like any other rock. Many places may be seen in pits along the road side, where this gravelly laterite is extracted as road-metal for which it is admirably adapted; and in these pits the connection of the more solid variety with the more loosely coherent may be traced. In all cases it seems to have resulted from a re-consolidation or subsequent cohesion of the previously free particles or nodules; and this seems to have been produced by the infiltration of water, which decomposing and partially taking up the iron has again re deposited it, forming a cement between the nodules. This re-cementing is always seen along lines of jointing or cracks, by which such water has trickled through the rocks, and the solid portions are seen irregularly disposed along the irregular directions of such infiltration."*

"These re-cemented masses of nodular laterite (kunkur or Iron kunkur of the Natives) formed from the already dried up and exposed particles generally fall to pieces on exposure; in this respect as in others differing from the more moist and clayey varieties of the so called laterite, the peculiar character of which is to become harder on exposure and desiccation".

"Economic Geology, Building Stones.—The rock most generally employed for building stones in these Districts" (Midnapoor, Orissa, and Bancoorah) "is laterite. Few rocks present greater advantages from its peculiar character; it is easy to cut and shape when first dug, and it becomes hard and tough after exposure to the air, while it seems to be very little acted on by the weather. Indeed in many of the sculptured stones of some of the oldest buildings, temples, &c., in the District, the chisel marks are as fresh and sharp as when first built. It is perhaps not so strong, nor so capable of resisting great pressure, or bearing great weights, as some of the sandstones or the more compact kinds of gneiss; but it certainly possesses amply sufficient strength for all ordinary purposes. It is largely used at the present time, but has also been employed from the earliest period from which the temples and buildings of the country date;† and the elaborate specimens of carving and ornament which some of these present shew that the nodular structure and irregular surface of the laterite does not prevent its effective use for such purposes of ordinary ornamentation as mouldings, &c. Another advantage it possesses over other rocks is the facility of transport, it being generally found in the low grounds, and often at no great distance from some of the many streams which traverse the vicinity"

"Mode of Quarrying.‡—Slabs from four to five feet long are easily procurable of this rock. They are quarried in a rude but effective way; a groove is cut with a rudely pointed pick round the slab, another is made underneath, and then a few wedges driven in split off the block. The more loose and gravelly forms of the laterite are universally used for road-metal, for which purpose they are admirably adapted."

On the western side of Bancoorah, and in the Pooroolia District, the Natives smelt the nodular laterite with charcoal, and in their rough mode obtain about 8 or 10 per cent. of iron of fair quality from it. From two maunds of this ore brought as a specimen six seers of iron were obtained, or 7½ per cent. Such iron meets with a ready sale at fifteen seers per Rupee. It works very readily.

This laterite is well described by Mr. W. T. Blandford, Geological Surveyor, in his Note on the laterite of Orissa.

"Surface Laterite.—The form which generally appears at the surface (it being rarely that the lower kind is exposed by the denudation of the upper) consists mainly of round ferruginous nodules, about one-eighth to one-fourth of an inch in diameter, in a matrix of dark reddish brown clay, which is generally more or less sandy. The nodules have a coating of brown hydrated peroxide of iron, and when broken some are seen to be black inside,‡ others appear to be formed of concretionary peroxide of iron, others again are evidently ferruginous pebbles of decomposed gneiss, or of sandstone if that rock prevail in the neighbourhood. These little nodules are frequently scattered over the country by the denudation and disintegration of the deposit containing them."

"Its state of Aggregation.—In places this substance is so soft that it may be cut, though with difficulty, with a spade; in other places it hardens into a firm rock, sometimes cohering only in the form of large blocks, the intermediate portion remaining loose and gravelly, but frequently forming a hard mass which covers the surface for considerable areas. It is only at the surface that this rock becomes thoroughly hardened, the lower portion requires exposure to give it firmness and strength; when exposed it becomes cavernous, owing to the washing away of the softer portions, and apparently a chemical change takes place, whereby the iron becomes altered from the state of anhydrous peroxide (and sometimes perhaps also of magnetic oxide) into that of brown or hydrated peroxide.§ To this chemical change the

* Note by Revenue Surveyor.—Is it not this that makes it so uncommonly useful for roads? If laid just before the rains the water acting as above mentioned binds the whole into one solid mass, but if plenty of water be not available and it be laid during the dry season, and there be much traffic over it, it never binds, but soon pulverizes to dust.

† Note.—The oldest temples at Bishenpoor are built of it partially or wholly, but it has not been much used otherwise in the Bancoorah District. Revenue Surveyor.

‡ Note.—From this kind the Natives extract the iron.

§ Note.—Such is the present appearance of the stone used in an old temple in the old Fort of Bishenpoor; the cavernous surface being glazed over, and is very hard polished and durable. Revenue Surveyor.

coherence may perhaps partly be attributed; much, however, is doubtless due to the mere thorough drying of the clay by the heat of the sun."

FORESTS, JUNGLE, &c.—The uplands are still covered in most parts with low scrubby, and in some very thorny, thick jungle, intermixed here and there in the western and southern parts of the District with trees of larger growth. But in the central portions of the District nothing but stunted jungle (chiefly Sukooa or Sal) (Shorea robusta) now remains, all else having given way to the axe of the woodman or charcoal burners. The latter are ruthless enemies of these natural protectors of the soil. Though the large trees were consumed long ago they, wherever permitted, still carry on their avocation, digging up and burning down the roots and stumps for charcoal.

The consequence is that all such tracts, where no restriction is put on these people, are rapidly becoming barren. Here and there, it is true, a scanty herbage still springs up under the slight cover afforded by the stunted bushes remaining. But so insufficient and coarse is it, if left to itself, that the inhabitants resort to the expedient of forcing it by firing the scrub. This they do in March and April yearly. Immediately after the firing, and with the first shower of rain, the grass again shoots up of a finer and better quality, affording a little more nutriment to their half starved cattle. But unfortunately at this time the Sukooa bushes are just putting forth their new leaves and shoots. These are necessarily destroyed, and the growth and spread of the bush effectually retarded. The surface soil of the uplands thus denuded of the protection Nature would otherwise afford it is washed away by every fall of rain, and with it the ash of the burnt leaves and grass. As this denudation progresses the bushes gradually disappear, leaving areas of hard compact kunkury rock exposed, on which nothing grows. Other evils follow in due course.

"There can be no doubt," writes a gentleman well acquainted with this and the adjoining Districts,* the greater part of his life having been past in them, "that the unrestricted clearing of the jungles, both here" (Bancoorah) "and in the Beerbhoom District adjoining, (it being only separated by the narrow slip of land belonging to the Burdwan District between the Adjye and Damooda Rivers,) has had great influence in decreasing the annual amount of rain and impoverishing the country. The Sherghur Pergunnah of Beerbhoom is perhaps the best example of the truth of this. What, about half a century ago was thick jungle and waving plains of grass is now almost a sterile and barren waste. Wherever the land was fit for cultivation it was ploughed up. The successive rains have washed away the soil of the uplands, and have left only a bed of kunkury earth (rock?) on which nothing will grow. It is only in the valleys, where there is Paddy cultivation, that there is any good soil to be found. To the Paddy Khet ridges (raised to keep in the water supply) is it owing that the soil of the valleys has not been carried into the Rivers. Wherever a house, garden, or mangoe tope has been surrounded with a bund so as to keep in the rain water, the soil again collects, and these bunded portions of the District become the oasis in the surrounding deserts."

PLAINS, SOIL PRODUCTIONS, MODE OF CULTIVATION.—The soil of the low lands and valleys is generally rich and productive. It is commonly divided into two kinds, "Sali" and "Sonah," or poor and rich. The cultivation of the "Sali" is exclusively restricted to the coarser kinds of dhan (rice). In the "Sonah" all kinds of crops are grown. It is customary to plough the "Sali" soil four times before sowing the seed. If manure of any kind be available a small quantity is worked in at each ploughing. The common manure used is that obtained by scraping the bottoms of tanks or the reservoirs in the valleys when such happen to be near at hand. The latter impregnated as it is with the ash of the burnt uplands is considered very good manure.

The first ploughing takes place early in February or March, and the three following ones between that and July or August, according as the season may be wet or dry. The process of sowing, weeding, and reaping is precisely the same here as in other parts of Bengal. A small ridge or bund is raised round each plot or field after the ground is considered sufficiently ploughed: the cultivator then lets in water from the tank, reservoir, or dammed-up khall in which he has his water supply. This water is allowed to stand some time to assist in decomposing the dhan stubble and roots of the previous year, and to incorporate them and the manure more intimately with the soil. The ground then receives its final ploughing, after which it is harrowed and levelled, and the seed is sown. About two months after the sowing the young plants are transplanted into other plots at regular intervals apart. Whilst the plant is still young the earth is gently loosened round the roots by hand labor, or sometimes more roughly by plough. The crop is kept carefully weeded. When it is nearly ripe a bamboo is laid horizontally on the ground and drawn over the plants, thus laying them down regularly in one direction. It is reaped in December or January, and bound up in small bundles, and subsequently is either beaten out on a board by men, or trodden out by cattle on the spot, or it is carted to the homestead for the purpose. Such of the stubble as may not be required for other purposes and the roots are left on the ground to rot and help to renovate the land for future crops.

* NOTE.—Mr. J. Erskine of Sonamookhy.

"Sali" lands are allowed to lie fallow every third or fourth year.

The "*Sonah*" or best soils are never permitted to remain uncultivated. The same kinds of manure are used for them as for the "Sali," to which is added, especially in sugar-cane cultivation, the refuse of the cow-house, ash-pit, &c. The principal crops raised from them are rice (of the better kinds), sugar-cane, indigo, oil seeds (chiefly mustard), and in the richest soil of all, pawn, tobacco, and garden herbs and vegetables.

A careful succession and rotation of crops is kept up on all "Sali" lands, other than those last mentioned in which pawn, tobacco, or garden herbs are cultivated, the common rotation being as follows:—Let us surmise that the cultivator commences by planting sugar-cane. For this purpose the fields are ploughed and manured in March and April. When the ground is considered sufficiently prepared, the cane cuttings are dibbled in, and kept well irrigated throughout the dry months. The ground is weeded as occasion requires. The crop is ready for cutting in the following February or March. After the cane is off the ground the plough is passed through it, and teel sown, which is cut and garnered in May or June. The soil is then well ploughed and prepared for an Aoos dhan crop. This is sown in June or July, and reaped in the following September or October. The fields are again ploughed twice, and after being well harrowed a crop of mustard (often mixed with peas) is sown. These crops ripen, and are gathered in in January or February, after which the fields are again well manured and ploughed ready for another crop of sugar-cane. In some parts cotton alternates with sugar-cane after the mustard has been cleared off the ground.

Indigo is also grown in the most suitable and fertile parts, and generally yields a good average return. But the decrease in the rain-fall, and its infrequency of late years during the months of March and April (the best spring sowing months), owing doubtlessly to the unsparing clearing of the jungles of the uplands, has operated disadvantageously on the Indigo cultivation. Trying, indeed, must it be to the Planter to see during these months the clouds gathering in heavy masses in the North-West, promising a good fall of rain and early sowing, to anxiously watch their approach and time after time to see them pass over, leaving none of their watery burden behind them, save a few large pattering drops. The burnt and barren uplands have no longer any attractions for them. Ignorance has denuded them of all their fair forest trees.

Late sowings beget late plants; and hence to add to other difficulties comes that of shorter time to work off the produce. The Indigo Planter requires hot dry weather to work off his vats with advantage, and such days are few and far between in the rains, which must inevitably be well set in ere he can cut his plant after late sowing. Hence too another embarrassment. No matter how promising the plant may be, long continued rain washes out the color. Suppose fine weather follows such a fall, still the Planter cannot cut, or, if he does, he does so to a certain loss. He must allow the plant to recover itself. He does so, gets perhaps a day or two of good cutting, works his vats full power, when down comes the rain again, and his hopes are once more damped and his patience tried to the utmost.

In former days the sowings of Bengal were chiefly, if not wholly, made in Spring, but of late Autumnal or October sowings have been gradually taking the place of Spring ones. This is owing to the much greater uncertainty in (often total want of) the Spring rain-fall of late years—an uncertainty that seems to be on the increase. How much of this may be attributed to the clearance of the jungle tracts in the western Districts it would be difficult to say. But that it is in a great measure caused by it there can be no reasonable doubt. In all countries the denudation of the land of forests and jungle has been marked by decrease of, and uncertainty in, the rain-fall. During the Spring months the rain invariably comes from the north-west, and it is in the Districts in that direction with relation to Lower Bengal that the forest has been and is so wantonly cut down.

INDIGO FACTORIES.—The principal Indigo Concerns are those of Mr. J. Erskine in the north, and Dr. Cheek in the south of the District.

The former having Head-Quarters at Soonamookhy and out-factories at Assooreah Bessooreah, Narainpoor, Rampoor, Tasoony, Kishtonuggur or Kishennuggur, and Gopalpoor.

The latter, with Head-Quarters at Bancoorah, has factories at Santore, Machera, Onda, Bishenpoor, Amdangah, Champatola, Jeypoor, Thotulpoor, Thutnuggur, Gopalnuggur, Pathursayer, Jummoora, Borah, and Cawkleea.

TREES AND PLANTS.—The following are the principal useful trees and plants growing in the Bancoorah District, *viz.*,—

"ALKUSSEE OR ALKOOSHEE."—(Carpopogon Pruriens) a leguminous creeper, the seeds and seed-vessels of which are pounded and used as a blister. The seed-vessels are covered with fine hairy spines, which are highly irritating to the skin when handled, causing inflammation and swelling.

The hairy spines of another kind nearly allied to the above the (Urneuna Pruriens), mixed with sugar or honey, are used as a vermifuge; about a tea-spoonful for a dose. But it is seldom had recourse to.

"AMLEE OR IMLEE."—(Tamarindus Indica).—The common Tamarind tree, the fruit of which is dried and used in curries, or mixed with goor and water for sherbut. The Natives believe that this sherbut, unless drank very sparingly, induces rheumatism. The wood is very valuable, being hard and close grained. It is greatly used in making oil presses, sugar mills, &c.

"AMRA."—(Magnefera Indica).—This tree produces the fruit called sour-ball, which when ripe is generally eaten in its uncooked state. When unripe it is cooked first.

"AMULTAS."—(Cassia or Cathartocarpus Fistula).—A small tree very common in Bengal; leaves pinnate, flowers yellow, seed pods cylindrical, and about one foot in length, the pulp, of which is of dark brown color, sub-acid, and used as a laxative. The leaves possessing purgative qualities are occasionally used as medicine. The seeds are also pounded and used as a purge. The wood is very hard and durable, and much sought after by poor people for props to their houses. It is not easily affected by damp, and is not readily attacked by white-ants.

"ASAN."—(Terminata alata or glabra).—The leaves of this tree furnish one of the chief supplies of food to the caterpillar of the tussa-silk moth. These spin their cocoons on the small branches or twigs; the silk most prized by the Natives is produced from worms thus fed. The shellac insects also frequent this tree in preference to most others. The wood is good and used for lintels and door-posts chiefly.

"BABOOL."—(Mimosa Arabica).—This most useful tree grows well and luxuriantly in this District. The Natives use the flowers and seeds as medicine. The seeds are also used to feed cattle in bad seasons. The gum exuding from the bark is collected and sold in the bazars generally in a very dirty state. The wood is much esteemed for its durability and hardness. It is chiefly used for cart-wheels and ploughs. The bark yields a good tan, and a decoction of it is often used to harden the soles of the feet.

"BAIR."—(Zizyphus Jujuba).—Another very common and useful tree. The fruit of the wild varieties is very small, round, acid, and astringent. The poorer classes gather the fruit when ripe, dry it on the roofs of their houses, and use it as food. The wood is of little use, but the smaller branches are much used to fence in sugar-cane fields, &c.

"BAUS."—(Bumbosa Arundinacea).—Common Bamboo. This is only found about village sites, and does not, I believe, grow wild.

"BEL."—(Rgle. Marmelos).—This tree attains a large size and grows luxuriantly here. The Natives bake the fruit in its rind or shell, and administer it in dysenteric affections. A decoction of the bark and root is sometimes used by them in cases of palpitation of the heart, and of the leaves in asthmatic complaints.

"BAG BHARENDA."—(Jatropha Curcas).—This plant grows round most of the village gardens. The seeds, from which oil is also expressed, are used as a cathartic; the leaves for poultices. The milky juice that exudes from the stem, when cut, forms, with Oxide of Iron, a good black varnish.

"BICHITIE."—(Tragia involucrata).—The roots of this plant are employed by Native Doctors (Koobirajes) as an alterative medicine. The hairy spines on the leaves sting sharply. They are sometimes wetted and applied, with advantage, to paralyzed limbs to excite sensibility.

"BHIMRAJ."—(Avencennia tormentosa).—The Native Doctors use the leaves of this plant as a poultice. The lower classes boil the ripe seeds and use them as food.

"BUHERRA."—(Terminalia Bellerica).—The fruit of this tree has astringent and tonic properties. Infused in water it is given as a cooling draught in fevers. The seeds are used in making ink, and oil for burning is extracted from them. The expressed juice of the fruit is used as a basis for several colors in dying.

"DATURA."—(Datura stramonium).—This rank poisonous plant may be seen growing in the vicinity of every village. It possesses narcotic qualities similar to Belladonna and Hyascyamus, and may be used as a substitute for the first in the shape of an alcoholic extract. The seeds when eaten produce intoxication with fierce delirium. They are sometimes mixed with sweetmeats, and secretly administered for purposes of theft or other criminal designs. The leaves smoked with tobacco are said to be useful in asthma. There are two other kinds, the "kala" and "sada" Datura (Datura fatuosa and Datura alba), whose properties are similar to the above.

"DHAMIN."—A few trees of this useful, hard, close-grained, and elastic wood are found in the western jungles; the wood is used for Banghy sticks, and when procurable is preferred to Bamboo, being almost as light and far more durable. The Sonthals use it for bows, ploughs, &c.

"GAB."—(Diospyros or Embryopteris glutinosa).—This tree is very common in this District. It is chiefly valued on account of its fruit, the expressed juice of which boiled down to a thick consistency is used by Native boatsmen as a varnish to protect boats from decay and from the attacks of worms. They apply it both in and outside. The outside of the boat is generally cleaned before the application of the Gab. The juice contains about 60 per cent. of tannic acid, and is a valuable astringent and styptic, and is used as such by the Native Doctors. When ripe the fruit forms an article of food, and is much esteemed by the country people.

"HUREETUKEE—HURRA."—(Terminalia chebula).—The unripe fruit of this tree is used by Natives under the name of "Joungee" in cases of indigestion. It is a brisk purgative. The ripe fruit called "Burra Hurra" is a milder purgative, and is used as such. Mixed with Kutechu it is a favorite remedy amongst the Natives for ulcers in the mouth.

"JIGUL OR JIAL."—(Odina wodier).—A large flowering tree. The flowers of which grow in large convoluted spiked branches, somewhat like the blossoms of the mangoe tree. The seeds are used to feed birds. A viscid gummy substance exudes from the bark, and is used by Brahmins to cleanse their "Juneos" or sacred threads. The bark possesses astringent qualities, and is used as a gargle in cases of sore throat.

"KAMRAJ."—The root of this plant is believed by the Natives to possess aphrodisiacal qualities, and is used by them accordingly.

"KATH BEL."—(Feronica elephantum).—A large tree with thorny branches. The fruit contains a sub-acid edible pulp. The Natives use the young leaves as a stomachic stimulant. A large quantity of gum exudes from the bark, very like Gum Arabic.

"KOOCHILLA."—(Strychnos nux vomica).—Rather a handsome tree with leaves polished on both sides, common in all the western and southern jungles. The fruit is round, and about the size of, and not unlike in color to, a small orange. It is covered with a hard shell. This, when the fruit is ripe, contains a bluish semi-transparent pulp like starch jelly, in which several round and flat seeds are imbedded. These contain Strychnine and Brucine. In small doses the seeds act as stimulant tonics. The Natives appear to make little or no use of either the wood or fruit of this tree.

"KOONCH OR GOONGCHEE."—(Glycirrhiza glabra).—A rather pretty creeper, bearing the pretty red and black seeds so often used for children's necklaces. The roots have a flavor like common liquorice, and are used medicinally by the Natives.

"LALL MOONJHEE."—The Maader plant grows wild throughout the Bancoorah Jungles. The seed pods are much smaller than those from the cultivated plant, and afford far less coloring matters.

"MUHOOA."—(Bassia latifolia).—This tree is very common. When its thick waxy-leaved flowers begin to fall, the people gather them up carefully, and use them either to make spirits from, or dry them for food. They contain a large quantity of saccharine matter. The seeds yield an oil and a kind of buttery substance, both of which are used to mix with and adulterate ghee. A decoction of the bark and leaves is said to be useful in cases of rheumatism.

"PULLAS."—(Bulea frondosa).—The Pullas-gond (gum) or Bengal Kino is procured from this tree. It is rich in tannic and gallic acids, is a powerful astringent, and very useful in cases of Diarrhœa.

"PIAR OR PIAL."—(Chirongia sapida).—Is common in the Jungles. It bears a fruit not unlike a grape in appearance, the seeds of which are eaten, either cooked or raw, in the North-West, where they sell at one seer per Rupee. The inhabitants of Bancoorah, however, eat the pulp only, and throw away the seeds.

"SAHAJNA OR SHAJNA."—(Moringa Ptrygospema).—Commonly called horse radish tree. The flowers and young pods are used by Natives in curries. The pods also make a good pickle with vinegar and salt. The roots have a pungent taste, and furnish a substitute for horse radish. They are also considered useful in cases of paralysis: a limpid oil called "Ben" is extracted from the seeds, and is used in Native perfumes and by watch-makers.

"SAL."—(Shorea robusta).—The uplands appear to have been once covered with large trees of this species, but few now exist of any size. Dwarf shrubs and sucklings called Sukooa are very common. To the west in the Pooroolia District forests of large trees of this species still abound, and afford fine timber for beams, doors, &c., &c.

"SEMUL."—(Bombax heptaphyllum).—The common cotton tree is very common. The wood is too soft for any use except burning. The Natives sometimes use the cotton to stuff pillows, mattrasses, razaies, &c.

"SEMTAWUR."—A prickly shrub with very small, round green leaves. The roots, which are thick and soft, are made into a preserve with goor or sugar. Boiled down with sugar and milk they are used as a cooling medicine.

"TEND OR TENDOOA."—A small tree affording a very hard, close-grained wood. The centre or core is very hard and black, and in old trees similar to ebony. Besides the above, mangoe, date, fan-palm, neem, pepul, &c., are as common here as in other parts of Bengal.

The principal products of the District are different kinds of rice, mustard, teel, sugar-cane, indigo, pawn, cotton (a little), garden herbs and vegetables (in the vicinity of villages only), chillies, &c.

TENURES, MODES, AND RATES OF ASSESSMENT.—Here as in most Districts of Bengal the land is let and sublet to a great extent, many middlemen coming between the Zemindar and the Ryot or cultivator. There are commonly—

1st.—The Zemindar who holds the land from Government.

2nd.—The Putneedar who leases from the Zemindar.

3rd.—The Dur-Putneedars holding lease under the Putneedar.

4th.—The Shah Projas or head Ryots renting from the Dur-Putneedar.

5th.—The Koorfa Projas (or under-tenants) who lease from the Shah Proja; and, lastly, the cultivators or common Ryots. Now, as each of these men in subletting must secure some profit over and above the payment he has himself to make, it clearly follows that the margin left for the cultivator, after payment of his rent and allowing for wear and tear of implements of husbandry, is very small. This small balance also is often still further decreased by the claims of the Muhajun or money lender.

The manner in which the Ryot gets into the Muhajun's books, from which he seldom escapes again, appears to be generally as follows:—

Few of the cultivators can afford to save up sufficient seed from their crops to sow down their fields again, or, if able with care to do so, seldom do. Still fewer have money to purchase seed with when the sowing season comes round. Recourse is therefore had to the Muhajun, who never lends at a lower rate of interest than 24 per cent. per annum, and then only on mortgage of land or property. The Muhajun on lending money usually takes a bond for a much larger amount than he actually pays down. Thus, if a man requires to borrow Rupees 50, he has generally to give a bond for Rupees 75, or, in some cases, as much as Rupees 100, according to the security he is able to give. Sometimes the Ryot borrows in kind, and this is a favorite mode when Muhajuns or Zemindars are lending to very poor men. In such cases the agreement generally entered into by the Ryot is to repay in kind at the ensuing harvest, with from 50 to 100 or more per cent. increase on the quantity borrowed.

When once a Ryot has thus been reduced to borrow he is seldom or never able to clear himself of his obligations. As a rule the poor classes appear to think little of the future. The present with its cares and troubles, its joys and pleasures, suffices for them, and so when the time for payment of his loan comes, and the poor man finds himself unable to pay up principal and interest, he pays all he can, and the Muhajun strikes the balance. He then, if he can, enters on a new loan, including the balance of the former one, and so he goes on until body and soul he is bound down to the inexorable money lender.

One class of Ryots called Mukururreedars are men who held lands at a permanently fixed rate from Zemindars since the days of the first Rajahs of Bishenpoor.

Another class of Ryots are those called "Mourooseejotdars," or such as hold a permanent lease of land at certain fixed rates, and from which they cannot be ousted. Of these there are two kinds; *first*, those who live on their own lands, and who are called "Khoodkaust Ryots;" and, *second*, those who reside in adjoining villages, who are termed "Py-kaust Ryots."

There is another class who only hold land on yearly lease, and who generally pay their rents in kind. These frequently lead a wandering life, going from village to village, and settling for the time being where they can get such a temporary holding on the best terms.

The Munduls or headmen of villages generally hold certain lands under Zemindars rent-free, called "Khirnie," in return for which they are bound to help the Police, to attend at the Zemindar's Cutcherry when required to do so, and they become responsible, in some cases and to a certain extent, for what occurs in their respective villages.

A class of men called "Ghatwalls" also hold grants of land which were assigned to them in consideration of certain duties being performed by them.

This sect is peculiar to this and the adjoining Districts of Beerbhoom, Bhaugulpore, and Monghyr. In former days the responsibility of keeping open the roads and protecting travellers from being plundered rested with them. For this the grants of land were allotted to them. The custom then was for every traveller or merchant, on entering a Ghatwall's beat, to apply for a pass from the Chief Ghatwall. This he obtained on payment of a small sum of money, black-mail in fact. In the earlier days of the system this pass carried a man fairly through all the difficulties of the road, producing his pass being generally sufficient to secure him from any molestation. But as the tribes became more divided and dissensions sprung up amongst them, the numbers of Chiefs increased, and a pass then only sufficed to protect a man from one end of a Chief's beat to another. On passing the so called boundary line between two Chiefs' domains he had to apply for and obtain another pass, and again pay down his money. A man neglecting to get a pass fared but badly, and was considered fortunate if he escaped with the loss of his property only.

The levying black-mail and granting passes has, of course, ceased, as a rule, long since. But true to their old habits some even now attempt to seduce the unwary or ignorant traveller into paying them to pass free. An instance of this occurred when the Revenue Survey Camp was pitched at Bishenpoor. A little way from the Camp on the Midnapoor road two men had established themselves under pretence of levying fees on account of Zemindars from the wood-cutters bringing in wood for sale in the Bishenpore market. These men demanded payment also of travellers going along the road, and carried on their trick for sometime undiscovered. But one day a traveller having paid the first man strongly objected to paying the second; the fellow insisted, but the traveller determined not to pay the cess twice over, came into the Camp to complain to the Saheb, and get redress. The case was at once brought to the notice of the Police Authorities, and the black-mail leviers disappeared from that spot at any rate. This was going on close to a Thannah.

There are said to have been six great divisions or tribes of Ghatwalls in the Bancoorah District. They were none of them of any particular and exclusive caste however. The names of these divisions or tribes was as follows, *viz.*,—

1. The Banktore.	4. The Khatool.
2. The Bankdho.	5. The Jyebelia.
3. The Chooa Moosuia.	6. The Baeesgram.

These held lands granted to them as Jagheers, on condition of their keeping open the ghauts or roads. Some possessed a rent-free tenure in their grants; others paid a small quit-rent called Punchukee to the Collector; others again paid the same to the Zemindar on whose lands they were located.

The first five tribes, who now pay rent to Government under the general name of Baro-Hazarees, were all originally included in the Zemindaree of Bishenpoor, then in possession of the Rajah of Bishenpoor. But subsequently, on the Rajah becoming a defaulter in payment of ervenue, the Estate was put up for sale, and sold in the year 1198 B. S. (A. D. 1791.) Eleven years after this Sir Charles Blunt, Commissioner, made a settlement with all the Ghatwalls of this Estate (not living on the "Baro-Hazaree" Mehal lands), then numbering about 2,300 souls, and appointed to their safe conduct and custody forty-three Ghats; in consideration thereof assigning to them for their use 34,934 beegahs of land, for which they were bound to pay an annual rent or Punchukee of Rupees 4,690-12-7¾ into the Collectorate Treasury.

The sixth tribe were not originally Ghatwalls, but were attached to the Topekhanah (Artillery) of the Bishenpoor Rajah. Their duties were to attend on him on all occasions of ceremony with horses, arms, &c. For the due performance of these duties certain lands were made over to them and their heirs in Jagheer, for which they had to pay a small Punchukee to the Rajah; how much is not well known. These had twenty-three Ghats assigned them in the days of the Bishenpoor Raj under twenty-three Sirdar Ghatwalls, each having charge of a Ghat, and 188 Tabeedars, or subordinates to the Sirdars, were also appointed to rule over them. The Sunnud or Issam Nuweesee Papers assigning them this Jagheer allowed them about 6,000 beegahs of land. These pay rent to the Zemindar.

The Estate in which their lands lay was subsequently purchased by Mr. J. Erskine, of Soonamookhy, (to whom I am much indebted for information regarding these people and their tenures.) He found that he had to receive Rupees (1,300) thirteen hundred as Punchukee rent from the Baeesgram Ghatwalls. At first he had great difficulty in getting a single spot of land on the Estate he had just purchased even to establish a Cutcherry. The Ghatwalls laid claim to all. On Mr. Erskine remonstrating with them, they said they had no objections to his taking over for himself the small barren Hill of "Koro" before alluded to, which was apparently fit for nothing but a Trigonometrical Station, and as such had been made use of. They held Sunnuds for 6,000 beegahs, and on the strength of these claimed and held possession of the whole. Subsequently the Revenue Survey operations established him fully in his rights, and confined the Ghatwalls to theirs.

When Mr. Erskine first purchased the Estate there was not a single market or bazar in existence on it. Mejea Assooneah and Bancoorah were the two nearest places where the Ryots could barter or exchange the produce of their lands. Mr. Erskine established a market at Kapistea early in 1855. For about six months he had to support it entirely himself; no one would resort to it. By degrees, however, it became more popular, and in the end of the year 1856 the Reports of eight market days shewed that upwards of Rupees 1,000 worth of sundries had changed hands. Since then it went on steadily increasing in importance, and others were started forthwith under happier auspices, and with certainly a more ready welcome from the country people than had been accorded the starting of the first one.

It has been previously noticed that the District lands are divided into ten large Estates. Each of these has its own peculiar rates of assessment: these were originally fixed by Mr. C. Keating (then Collector of Beerbhoom) in 1792, and have since then been generally adopted by land-owners. The best or "Sonah" land averages from Rupees 5 to 7 per beegah; the poor or "Sali" from 12 annas to Rupees 3. These are, however, the rents paid by the cultivators or Ryots.

The proprietors of rent-free Estates generally collect their rents of poor soil in kind. At the rate of from half to one measure (maup) of dhan per beegah, the value of the measure may be taken at Rupees 1½; the rent of Sonah lands on such Estates is also small.

The ground rent paid into the Treasury yearly on account of Government is Rupees 4,32,995-13-0¾,* which, taking the area of cultivated and cultivatable land at 728,200 acres = 2,202,805 beegahs, gives an average of annas 6-9½ per acre, or annas 3-1¼ per beegah. In this calculation one-third of the jungle tracts only has been considered to be uncultivatable and thrown out. Village sites being highly remunerative to land-owners have been included.

Labor employed and its Remuneration.—The laboring classes are but badly paid in this District—barely sufficient indeed for existence. The wages of the permanently employed laborers called Malmudars averages from Rupees 10 to 18 per annum in cash, with a certain

* Vide Appendix.

allowance of dry food, and tobacco, and clothes. Those on the lower rates receive in addition to the annual money rate two meals per diem, one dhotee per quarter, and one chuddur (sheet) per annum. Those who receive the higher rates of annual wages get in addition but one meal per diem, and no clothes either quarterly or annually.

Temporary laborers are generally paid by the Natives in kind: they receive a little dhan, moong dhall, tobacco, and one small measure of mustard seed, the value of the whole being about 1 or 1½ annas—barely enough, in fact, to keep body and soul together.

The above are the rates of payment as ascertained by Deputy Collector Taraknath when he was employed in settlement operations in this District. I am indebted to him also for other useful information given in this Report. In all cases his statements agreed well with information I gleaned myself either personally or through my Assistants.

Rivers.—The two principal Rivers are the Damooda and Dalkissur, neither of which are, however, worthy of being called navigable.

The first, the Damooda, which forms the northern boundary of the District, rises in the hills about sixty miles west of the station of Ramghur. In its course through the District of that name it receives the waters of many smaller hill streams, and at about twenty miles west of Raneegunge is joined by the Barakur, another hill stream, having its rise about sixty miles north of that of the Damooda. The Damooda follows nearly a straight course along the Bancoorah boundary for thirty-nine miles, has a fall of 3·40 feet per mile,* and is full of sand-banks. During the rains boats are employed on it to convey coal from the Raneegunge coal field, but owing to the velocity of the current, and the suddenness of its rise and floods, the undertaking is a very hazardous one. During the hot season it is easily fordable at most parts and unnavigable.

The Dalkissur enters the District under the Station of Bancoorah, traverses it from east to west, and divides it into two nearly equal parts. It has its rise near Tilabani Hill, in the Pooroolia District. The fall of this River is less than that of the Damooda, and its course is tortuous. It also is liable to sudden floods.

The banks of these Rivers are chiefly composed of clay and sand mixed with kunkur, with laterite rocks cropping out here and there.

The soil of their beds is of very coarse sand. The principal smaller streams are the Jykhal or Selye Nuddee in the south-west corner of the District with a very rocky unnavigable bed, and the Salee, an affluent of the Damooda, which drains the northern portion of the District.

During floods in the Damooda and Roopnarain (in the former especially) such is the suddenness with which the rain water pours off the hills through hundreds of chanpels into their beds that the waters heap up and form a dangerous head-wave, called the Hurpah Ban. It is not unlike the bore-wave in the Hooghly, but is of greater breadth, extending nearly from bank to bank. The Natives affirm that in great floods it is sometimes five feet in height, presenting the appearance of a wall of water, so to speak, coming down. These sudden floods are said to have often overwhelmed and swept away travellers, cattle, &c., that happened to be crossing at the time. Boats, too, are often driven from their moorings, or caught in their passage, dashed against the banks, or each other, and destroyed. Major Baker, Engineers, when Consulting Engineer, Railway Department, in a Report to Government, thus writes of the floods in the Damooda River:—

"The area of land drained by this River and its affluents west of Burdwan is about 7,200 square miles (according to Tassin's Map). It may be assumed as possible that ten inches of rain may fall in twenty-four hours over the surface, and be so timed that the drainage of the more remote parts would meet that of the nearer at the same time and place; and assuming further that one-third of the rain-fall will find its way into the Damooda (the rest being absorbed into the soil or evaporated), we have cubic feet 55,756,679,487 of water to be disposed of in twenty-four hours, or cubic feet 645,333 per second, which at an average velocity of three feet per second would require a section of square feet 215,110, and fill a channel twenty feet deep and 10,755 feet (about two miles) in width."

"Nor does it appear," he goes on to say, "that this calculation of what might possibly occur is disproportionate to the effects which have been actually observed. In Captain Crommelin's Report to the Military Board, dated June 18th, 1841, it is stated that, according to a section taken near Ragubpore in 1840 by Captain Finnis, the flood rose seventeen and a quarter feet above the dry season level, and, though the River is there one and a quarter miles wide, swept fairly over the plains on the right bank, and those who have witnessed the floods of the Damooda when it has burst its bounds describe the torrent as covering the ground to a great depth and spreading as far as the eye can reach."

The banks of the lower portion of the Damooda River were frequently inundated by these floods overtopping the banks. To protect their fields and crops many Zemindars erected bunds. But each did so to suit his own wants only, and quite irrespective of any benefit or injury that might accrue to his neighbour. Subsequently Government seeing the evil

* Note.—As per series of levels taken by an Engineer Officer.

of this put all the bunds under the charge of their own Officers. But finding they gave endless trouble, and more than doubt having arisen as to their ultimate good, the Government, in the year 1855, decided on keeping up those on the left bank of the River only, and destroying in part those on the right bank. By this means it was calculated that less injury would happen to the Zemindars and others by allowing the water to flow more gradually and quietly over the land, and as it would do, if left to itself, than would be the case, when through accident or unusually high floods the water might (as it often did) burst the bunds, and rushing down in immense volume carry immediate destruction to all within its reach.

The system of bunds was never very extensive on that portion of the Damooda bordering on Bancoorah District. Here the channel, though shallow, was broad, and sufficed to carry off most, if not all the flood water. It was lower down in the Burdwan and Hooghly Districts that the lines of bunds became extensive and continuous on both banks.

The bunds commence in Bancoorah District about one mile below the Burrah Indigo Factory.

Both the Rivers fall into the Hooghly within a few miles of each other. The Damooda about two miles south of the Dhaja Semaphore, and nearly opposite Fulta. The Dalkissur, under the name of Roopnarain, a few miles lower down and opposite Hooghly Point. Between these two entrances lie the much dreaded James and Mary Sands. These are formed from the immense quantity of silt brought down annually by the Hooghly and Damooda floods being deposited there. The quantity of earthy matter held in suspense in the Damooda floods is estimated by Major Kennedy at two cubic inches per cubic foot of water.*

The deposition of the suspended matter at this place is caused by the floods or freshes in the River Roopnarain, which take place generally at the same time as those in the Damooda, damming or ponding up the Hooghly current, and forming a back-water which favors the deposit.

Colonel Garstin, Engineers, in a Minute on these Rivers, dated April 1854, says:—"I admit that the James and Mary is formed by the collision of the waters of the Hooghly and Roopnarain; the former, however, greatly assisted by the Damooda in the rains, when it brings down sand with it, and forcing the current of the Hooghly to the left bank, instead of allowing it to go fairly down its whole channel, and aided by the projecting left bank, making the opposition of the Rivers more direct, and causing a great back-water between the Damooda and Roopnarain under the right bank."

Whilst drawing up this Report I obtained copies of two old Charts of the River Hooghly, These were copied from old records in the East India House, Leadenhall Street, by Mr. Barlow (Retired Branch Pilot) and given to me by Mr. Robert Smart, Assistant Revenue Surveyor.

Though this subject is foreign to the object of a simple Report on the District of Bancoorah, yet as these rivers pass through it, and the question of the formation of the sands at their entrances into the Hooghly has been and is one of great interest, I trust I may be pardoned for wandering so far from my District. But I do so in the hopes that by bringing these old Charts to light I may be doing some service, and perhaps some day, by their means, facilitate the removal of these dangerous sands should they so increase as to interfere with the trade of such an important port as Calcutta.

It will be observed by inspection of these old Charts that in former days the Roopnarain was called in one "the Ganges," in the other "the River Tomberlie;" and that it entered the River Hooghly at Hooghly Point exactly as at present, and was a river of about the same size as it now is. Searching, however, for the "Damooda" we find only a small stream called "the Rasphus" in the one Chart, and the "Mundulghat River" in the other, at the same distance north of the Roopnarain entrance as the present Damooda enters. Higher up, however, we perceive a much larger stream called "the Jan Perdo River" in both Maps; this is shewn to have entered the Hooghly about five miles above the village of Ryapore (present Roypoor) and corresponds with the present small "Khansonah Khall," or Kana Damooder, which enters the Hooghly five miles above Roypoor, and one mile north of Ooloobariah. It would appear therefore that this was then the principal out-fall of the Damooda waters into the Hooghly, there being no other large river that could have entered the Hooghly at that point.

The angle at which the "Jan Perdo" entered the Hooghly was then very favorable for creating a good scour in the reaches below it. Accordingly, we see that in those days the channel of the river was better, *i. e.*, shewed deeper soundings from thence to the Roopnarain than at present, when the old entrance of the "Damooda" or "Jan Perdo" having closed its floods have ceased to help the Hooghly from that point. Moreover, the present stream of the Damooda enters that of the Hooghly River at almost a right angle: it therefore, instead of helping the current of the latter river to overcome that of the Roopnarain, retards it, dams it up, and forming a back-water causes the formation of the Fulta Sand, and facilitates

* NOTE.—Major Baker's Memorandum on Damooda embankments, dated 17th June 1852.

at the same time the creation of a back-water from the Roopnarain, from the effects of which the dangerous James and Mary Sands are mainly produced. According to these old Charts small sands did exist in this channel in those days. In one indeed we find a shoal laid down by that very name. But it was of very small size and importance in comparison with the present extent of these perilous sands, which extend from the Roopnarain to the Damooda River entrance. They were then apparently in the first stage of their formation.

As before noticed the flood waters of the Damooda have long been a source of terror to Zemindars and Cultivators of land on its banks, and of trouble and expense to Government. Bunds have been erected originally from Burra Indigo Factory in Bancoorah District along the whole length of the stream southwards. But accidents were constantly happening, and when a bund did give way the consequences were most disastrous. Amongst other projects for improvement that of allowing the surplus waters of the Damooda to find their way into the Hooghly above their present entrance, and through some of the Khalls supposed to be old beds of the Damooda, was proposed; and, though many Natives were anxious to have a scheme of the kind carried out that they might benefit by the surplus waters, and so convert that which was a curse into a blessing, the project was set aside, seemingly because it was apprehended that it might prove injurious to the navigation of the Hooghly if the waters were admitted above or below Calcutta, or at any other than the present entrance.*

A careful study of these old Charts will, I think, shew that no such danger need have been apprehended could the old entrance into the Hooghly (just above Ooloobariah) have been re-opened, for here we see the main channel of the Damooda River opening into the Hooghly fourteen miles above the present entrance (then but a small stream), and a better channel than now existing in the Hooghly. If, then, the surplus waters of the Damooda could be again thrown into the Khansonah Khall or Kana Damooder and thence into the Hooghly, it would simply be a re-opening of a course once followed by Nature, and which the soundings shew to have been beneficial, rather than otherwise, to the navigation of the River Hooghly.

Nothing could be more unhappy than the angles at which the two Rivers, Damooda and Roopnarain, now pour their waters into the Hooghly, *viz.*, at right angles to it, whereby both create extensive back-waters and form large sandbanks, whereas could the Damooda be trained back into and held in its old channel, the combined force of its and the Hooghly's stream acting, as they then must do, in concert, would probably prove too strong for, and therefore overcome the opposition met with at the Roopnarain mouth, in which case, instead of the back-water being in the Hooghly, it would far more likely be in the Roopnarain, and there in that case would the chief deposit of silt be formed, "The Fulta" and "James and Mary Sands" no longer having so great a back-water to favor their increase would probably be gradually eroded and carried away, and the navigation of that part of the river be greatly improved.

The chief advocates of the proposal to allow the surplus water of the Damooda floods to pass off into the Hooghly appear to have been Major Kennedy, Consulting Engineer of Government, and Colonel Mactier, Member of the late Military Board, who both advised that the Kana Nuddee should be deepened to encourage the escape of the waters.

No one during the discussions that took place seemed to be aware of the fact of the "Damooda" having once run into the Hooghly, just north of Ooloobariah, where now only a small khall, the Khansonah, marks the old bed. It may be objected that there is no proof that the Jan Perdo was the Damooda, but seeing that no other large river exists, or is known to have existed north of the Roopnarain, that could have entered the Hooghly at that spot, it is fair to infer it must have been the Damooda. Indeed, a glance at the general run or direction of the khalls, old river beds and jheels, between Selimpoor on the Damooda at the mouth of the old Kana Nuddee and Ooloobariah would shew very clearly that a connection between the Damooda and Hooghly had once existed through them, even though we had not the evidence of the old Charts to back the opinion. If necessary, a series of levels would determine the question.

The question is how would the navigation of the channel of the Hooghly above the Khansonah Khall be affected if the Damooda emptied itself into that river there instead of where it does at present, and might not equally obstructive sands form there? There would, at any rate I think, be one great advantage, could a stream of sufficient volume be secured in the Hooghly just at and above the Roopnarain junction to overcome the outflow of water from the latter river. It is this, that at present the portion of the Roopnarain immediately adjoining the Hooghly forms an immense, and, I believe, constantly increasing, tidal basin with a comparatively small outlet, and which contains during the dry season such a large quantity of tidal water that during ebb, the force of the water running out of it being very much greater than that of the Hooghly, it effectually dams up the current of the latter, and the consequence is that the water over the shoals between the Damooda and Roopnarain in the Hooghly River is worse, and the sands more changeable in the dry than at any other season of the year.† But if, by throwing the streams of the Damooda into the Hooghly at a good

* Memorandum by Major Biker, Engineers, paragraph 5, dated 17th June 1862.
† This information I received from Mr. Hugh Lochard, C. E., Superintending Engineer, Eastern Circle, Bengal.

angle, the combined stream proved stronger than that of the Roopnarain, the tidal basin now existing and enlarging would probably soon be acted on and silted up, and as it silted the quantity of water, and with it the force of current, would diminish and no longer possess the power of causing the formation of sands in the Hooghly.

LAKES.—There are no natural lakes in the District, but in the vicinity of the city of Bishenpoor and within the old fortifications there are several fine and picturesque artificial ones. These were made by some of the ancient Rajahs, who taking advantage of natural hollows threw bunds across them to confine the surface drainage. These served to furnish the city and fort with a never failing supply of good fresh water: they helped to flood the fort ditches, and added greatly to the strength of the place. The two principal ones are named the "Lall" and "Jumoona Bunds." The gardens and pleasure grounds of the Rajahs were on the banks of the Lall Bund, but paddy khets and jungles are fast encroaching on them. There is now but a small portion at all cared for or looked after in any way.

TANKS.—Excavated tanks are very numerous in this District, but in the uplands the Natives in place of digging tanks throw embankments across the numerous hollows or valleys and so retain the surface drainage water for the irrigation of their crops; the sides of many or most of these tanks and reservoirs are planted with palm and other trees.

SPRINGS.—Springs are common throughout the uplands, but the Natives seldom or never use the water from them. So prejudiced are they against it that they object even to bathing in it; though beautifully clear and sparkling, and pleasant to the taste, they say no one can either drink or bathe in the spring waters without getting ill. It appears to act injuriously on the kidneys and is very hard.

CITIES, TOWNS AND VILLAGES.—The principal Cities in the District are "Bishenpoor" or "Bishtopoor," "Bancoorah," "Indas," "Desura," and "Mainapoor," each containing upwards of 2,000 houses.

Of these "Bishenpoor" or "Bishtopoor" is situated in the centre of the District, on the old Grand Trunk Road to the North-West Provinces, and about two miles south of the Dalkissur River; in north latitude 23°04′30″ and east longitude 86°23′. Its origin dates from the commencement of the Bishenpoor Raj, and according to Native accounts about the year 101 B. C. or S. D. 695. The following tradition regarding the birth and rise of the first Rajah of the race was obtained in Bengalee from the Dewan of the present Rajah, and was translated for me by the Reverend Mr. Robinson, Bengalli Translator to Government:—

"The Birth of Muharajah Adee Malya."

"Some people, residents of the Upper Provinces, were travelling to "Sree Khettra" to see the God Juggernath. Amongst them was a woman near her confinement. On reaching the village of Laoogram, her husband left her under the protection of a man named Punchanun Goha, and proceeded without her to Khettra. Shortly after she gave birth to a son, whom she called Kartick Chunder. Her husband and fellow-travellers never returned, whereupon the poor but upright woman falling into the shoreless sea of anxiety, and meditating day and night on her present sad condition became exceedingly distressed in mind. Her only comfort was derived from gazing on her child's face. In this occupation she passed her time. When the boy was in his eleventh year her protector, the Brahmin Punchanun Goha, said to her, "I wish to appoint your son to look after my cows." For some time the woman sat silent, but at length replied, "Yes, I consent, it is a necessary duty, and one of the chief rules of religion to acknowledge favors received.

"Kartick Chunder having entered on his duties as a cowherd the Brahmin fixed on mid-day as the time for him to return for his dinner. Every day at the appointed time Kartick came home, eat his dinner, and then returned to work. One day, however, overcome by the heat of the sun he lay down under an Augur tree and fell fast asleep. Dinner time passed, and the anxious mother not seeing her son return as usual began to weep. At this moment the Brahmin returning asked her the cause of her weeping. "It is long past noon," she replied, "and I cannot understand why Kartick does not return." Upon hearing this the Brahmin went out to seek him in the fields, and at last found him asleep beneath the Augur tree. At his head were two snakes covering his face with their outspread hoods; on seeing this the Brahmin thought to himself doubtlessly the snakes have killed Kartick; what shall I do, or tell his mother; thus thinking he approached and called to the boy, who awoke and the snakes retreated to their holes. Being astonished at this the Brahmin again thought to himself that Kartick could not be a common child.

"So taking the child home he went secretly to his wife and telling her the wonderful tale desired her never from that day forth to give Kartick the leavings of their food, or any thing bad to eat. Then going to Kartick's mother he said to her "promise me that when Kartick becomes a King I shall be his Priest, and that he shall act according to my council." The woman supposing the Brahmin was only jesting answered, "Sir, if this fortunate person should ever see such a day, your request shall be granted." Thus the Brahmin bound Kartick's mother.

"Shortly after this, in the rainy season, after a very heavy shower, Kartick, contrary to the Brahmin's advice, took a net and went out to fish. Having cast his net he brought up bricks

of gold instead of fish. He continued to do so until he had collected a large pile of gold, when he called his protector, the Brahmin, and with him carried it all home. Thus Kartick became rich.

"One day going into a forest to hunt, Kartick saw a heron strike down a hawk, take it up in its beak, and fly away with it, and he was much surprised that a small heron should thus easily carry off a heavy hawk, the strongest of all birds. Having considered the subject well he determined to build a house on the spot, believing that there must be some virtues attached to it.

"At that time the country thereabouts was in the possession of Joypal, a Soobadar of Lahore. Kartick having first sent him some large presents presented himself before him, and requested he might have a few soldiers as followers. His request having been granted he returned with the soldiers to his house, and shortly after going to war with Pudmo and other Kings of Mulyabhoom he conquered them all, twenty-two in number, and became lord of Mulyabhoom. This was in 109 B. S. He then took the name of Adee Malya.

"Bhugwan Bishnoochunder* having informed him in a dream that he would evermore abide in his then place of abode he called the place Bun Bishnoopoor.†

"Adee Malya having reigned fifteen years declared his son Joy Malya his heir, and went to heaven."

Whether Adee Malya paid tribute to the Lahore Soobadar is not known; but from ancient records still preserved in the Palace "it appears that his son, Joy Malya, did do so.

"Adee Malya's territories were (so sayeth tradition) bounded on the west, by Chattra; on the east, by Juhanabad; on the south, by Bogree; and on the north, by the River Damooda."

Rajah Bur Sing, one of Adee Malya's descendants, is said to have been noted for his many benevolent and charitable actions. He lived in 960 of the Bishunpoory year, or 1061 B. S. (A. D. 1655). To him are attributed most of the tanks and bunds forming the lakes at Bishenpoor. He also built many of the temples.

Another of the Rajahs named Choitun Sing was similarly noted. He also set himself to reform the abuses of his predecessor's rule, and with him the decennial settlement was made for the Jungle Mehals or Bancoorah.

Subsequently his sons squandered away all the property, and eventually the Estate was sold for arrears of rent.

The city of Bishenpoor was once strongly fortified by a long connected line of curtains and bastions, measuring seven miles in length, with small circular ravelins covering many of the curtains. Within this outer line of fortifications, and west of the city, lies the citadel. The remains of these defences still exist.

Within the citadel was situated the Rajah's Palace. What it may have been in the palmy days of its ancient chieftans it is difficult to say. But at present a very insignificant pile of brick buildings surrounded by ruins marks the site. The old court-yard walls are now nearly level with the ground, and its once massive gateways are fast falling to ruins.

Numerous old temples still stand in the interior of the citadel and in and about the present city. Those in the citadel are mostly in a ruinous state and overgrown with jungle; one south of and just outside its ramparts is of more ancient date than the rest, and of quite a different style of architecture.

The basement consists of a square solid plinth built of hewn stone (laterite) 100½ feet in length and breadth, and 7 feet in height. This is surmounted by a treble series of low arched colonnades 9½ feet in height, within which are several small, square, and dark chambers. The arches and their supports are all of brick. The outer colonnade is roofed in with the peculiar hog-backed domes of Hindoo architecture, whilst the remainder of the building is surmounted by a pyramidal stone roof rising in steps. The whole is well put together, and was once stuccoed. The only approach is by a flight of narrow stone steps at one corner, nor does it appear that there ever was another ascent to it (*vide* Illustration.)

Most, if not all the other temples are built of moulded and well burnt bricks, on the face of which shapes of birds, flowers, and other ornaments have been imprinted; these are so arranged as to form various patterns. In some of these temples, which are all square, the little turrets or towers built at four corners of the roof, and from the base of which the central dome springs, are not always of the same style of architecture, neither do these again always agree with that of the dome. For illustration a front view of one of the most perfect of the kind is given (*vide* Illustration).

On the rampart and alongside the south gate of the citadel is a curious old building, consisting of four solid brick walls with no entrance except from above. It has no roof, and according to tradition was the place into which criminals were thrown and left to die of starvation. It is also said to have had its bottom and sides studded with nails, but no trace of them remains at present.

The ruins of an extensive series of granaries may still be seen near this gateway.

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* The God Vishnoo.

† The present Bishenpoor or Bishnoopoor. Other accounts however say that the original city was built by the Pudumpoor Rajah, who made it and all his lands over to the Malya.

Referring to the Statement of crime the large proportion of heinous to petty crimes is somewhat remarkable, *viz.*, in 1854-55, 901 heinous to 937 petty, or nearly equal; and in 1855-56, 831 heinous to 907 petty, or 8 to 9 nearly. Of the 2,045 persons supposed to have been concerned in the 901 heinous crimes of 1854-55 but 324, or about 11 per cent, were arrested, and again out of these arrests there were only 121, or 31·2 per cent. convictions.

In the year 1855-56, though the numbers of heinous crimes appear to have decreased, the number of persons said to be implicated in them was larger than in the previous year. There were no less than 2,167, and of these only 430, or 19·8 per cent., were arrested, and of those arrested only 157, or 29·5 per cent., convicted.

The immunity of those supposed to be concerned in heinous crimes from arrest or punishment is doubtless greatly owing to three causes; *first*, the low state of morals existing amongst the lower classes, causing them to think little and be careless of crime and its punishment; and, *secondly*, to the fact of the majority being more ready to sympathize with the criminal than otherwise; *thirdly*, the safe retreat offered to criminals by the sparsely populated jungle tracts of the District, and the ease with which, even if hard pressed, they could slip from them into the dense forest wilds to the west.

The return of petty crimes shews a better state of affairs. Here we see that in 1854-55 these numbered 937. In them 2,277 persons were supposed to be concerned, of whom 2,274, or all but three, were arrested, and of these last 1,821, or 80 per cent., were convicted.

Again in 1855-56 of 1,788 supposed to be concerned in 907 petty crimes all were arrested, and 1,334, or 74·6 per cent., were convicted.

Supposing the numbers of adults to be two-thirds of the entire population, the centesimal proportion of crime amongst them would stand for the two years under review as follows:—

Persons supposed to be concerned in heinous crimes ... 0·72 per cent.
" " " petty " ... 0·70 "

An instance of the lawlessness of the inhabitants of the jungly tracts occurred during the course of Survey. One of the Zemindars was fined upon a complaint preferred against him by a Native Surveyor. A few days after the Native Surveyor received an anonymous letter, telling him the account would soon be squared between him and the man he had complained against (no name was given). Shortly after he and his party were attacked at night, several were severely beaten, the house they were in was burnt, and all the Government instruments taken away. Subsequently the Theodolite and some papers were found in an old well in the jungle. But there was never any clue found to the perpetrators.

Commerce—Manufactures.—The principal articles of commerce furnished by this District are rice, indigo, shellac and lac-dye, sugar, tussa, and silk pieces. With the exception of the coarser kinds of rice the home consumption of these articles is but small, nearly all being exported to Calcutta and other large marts where there may be a demand. The best rice grown is that called "Ramsaul," which is either exported or used exclusively by the wealthier classes.

Supplies of lac are furnished by the western jungles and those of Pooroolia. The Natives say the lac insect prefers the Assan (Termineta alata) to any other tree, and that from it the largest quantity and the best quality of this gum is procured. Collecting it affords occupation to many of the poorer classes of the jungle tracts, who are chiefly Chooars; these gather it, and sell in the Bishenpoor, Soonamookhy, and other markets. It sells in its crude state at from three to four seers per Rupee. The manufacture of the lac-dye and shellac appears to be entirely in the hands of Native Merchants.

The same jungles supply tussa silk, the best cocoons of which are also found on the Assan trees. The Bair trees also afford a good supply, but it is said to be of an inferior quality. The cocoons are collected by the same people as search for and gather the lac gum, and are brought in and exposed for sale at the different hauts and bazars. The most noted places for the manufacture of silk goods are Bishenpoor, Soonamookhy, Gopeenathpoor, Hursingpoor, and Barjora. Here they weave and prepare long coarse textured dress-pieces of many colored and striped patterns, check patterns being seldom seen. Double threaded silk gauzes generally of one color, a dull dark crimson, are also woven for women's dresses, and single thread gauze of various colors for muskito curtains or dresses.

At Soonamookhy scarfs are prettily embroidered in floss silks of many colors and patterns and generally on a black ground.

Though a great deal of sugar-cane is grown in the District there is but little refined or clarified sugar prepared from it, the Native Merchants preferring to export it after the first crystallization, or as raw sugar; the little that is refined is kept exclusively for home consumption, and not for exportation.

Great numbers of plates, cups, &c., are carved in Bishenpoor by stone-cutters of a kind of serpentine: the stone is brought from the Pooroolia District in roughly cut blocks of various sizes. It is of a light greyish, or slaty color, close grained and compact, and cuts easily. These plates and cups sell from 3 pies to 4 annas each, and are in very general use.

Weights and Measures.—Various weights are used in this District. In the Bishenpoor and many other principal bazars the standard seer of 80 Rupees weight is chiefly used. But in the western villages a seer of 93 Rupees is still in use at most of the

hauts. At the same time a smaller seer of from 60 to 65 Rupees is also used, the chief object in having these different weighted seers is apparently that, by using them, the Bunyas, when bartering at the hauts with the peasants, are able to take advantage of their ignorance, and gain by the exchange more than they would do were but one weight in use.

As with weights, so with measures, three or four kinds are used, all based, however, on the weights abovementioned, that is, the one seer rice measure may be for the 98, 80, or 60 or 65 Rupee seer, and the five seer (punseree) measure also. A Bunya, when lending grain for seed, will use the 98 Rupee punseree measure, and when the time comes for payment will, if he can, use the 60 or 65 Rupees' punseree. It is true that he calculates how many seers of one weight will be equivalent to a certain number of seers of the other, and that he calculates this fairly enough. But he gains nevertheless, for the diameter of both measures is the same, and it is customary in measuring out grain to heap up as much as possible. Each measure is thus somewhat overweight, and by using the heavy weight or large measure in lending he gives overweight the smallest number of times, and using the light weight, or small measure, in repaying himself, he gains the overplus the greatest number of times.

The old land measure prior to settlement operations in this District was according to Baboo Taraknauth, Deputy Collector:—

1 Kanee			= 12 Chittacks	Bengal	Standard	Measure.
4 Kanees	= 1 Oanee	=	3 Cottahs	„	„	„
50 Oanees	= 1 Arri	=	7½ Beegahs	„	„	„
4 Arris	= 1 Droon	=	30 „	„	„	„

The Bengal Standard Beegah, which was introduced with the Revenue Survey operations, is equal to 1,600 square yards, and is divided thus:—

20 Gundahs	= 1 Chittack	=	5 square yards.
16 Chittacks	= 1 Cottah	=	80 „ „
20 Cottahs	= 1 Beegah	=	1,600 „ „

There is another division of the Standard Beegah as follows, *viz.*,—

16 Gundahs	= 1 Biswansee	=	4 square yards.
20 Biswansees	= 1 Biswa	=	80 „ „
20 Biswas	= 1 Beegah	=	1,600 „ „

Roads.—Four main roads traverse the District; one to the north-west connects the Civil Station of Bancoorah with the Railway Terminus at Raneegunge. A second runs through the northern portion of the District between the Rivers Damooda and Dalkissur from the same station *viâ* Soonamookhy and Kissennuggur to Burdwan. The third is part of the old Trunk Road from Calcutta to the North-West, which, traversing the southern portion of the District, runs nearly parallel to and south of the Dalkissur River, and passing through Kotulpoor, Mirzapoor, Bishenpoor, Pautpoor, Kamarbarea, and Onda, enters the District of Pooroolia at the Civil Station of Bancoorah. The fourth opens up the communication between this District and Midnapore, and thence on to Cuttack and Pooree, and strikes off from the last-mentioned road at Bishenpoor. Great numbers of pilgrims annually traverse this road on their way to the greatest and most sacred of all the Hindoo shrines "Juggernath." There is a branch road also from Soonamookhy connecting it with the Railway Station of Paneeghur.

All the main roads were once well metalled and bridged, but were not in good repair at the time the Survey operations were going on. In several places the bridges had been cut off by the streams from the road, which, therefore, passed down into and through the water on one side of, instead of over, the bridge. The timber traffic from Pooroolia is said to have fallen off considerably since the bridges and roads were neglected. The only method the Natives appear to have of conveying timber is that of fastening each beam on one or two of the common country hackeries, according to their length and girth. If, then, the timber be of any length, the difficulty of getting it and its carriage into, and out of, a narrow deep nullah may be easily conceived. The carter must either unload and convey cart and timber over separately, or, as I believe they always do, let cart, bullocks, and all go full swing into the nullah, and take their chance of either being upset at the bottom, with a bullock's leg broken, an axle snapped, or a wheel off, or of getting sufficient impetus on the downward journey to run all up the other side if the bullocks keep straight, or the end of the beam does not stick into the bank, and send all back again.

Numerous common cart roads and tracks intersect the country in all directions, rendering transit of light loads by carts or bullocks easy. The facilities for road-making are very great in this District, the laterite formation, already mentioned, affording an inexhaustible supply of excellent metalling.

Postal arrangement.—The same system for letter and parcel carrying and delivery exists here as in other parts of India, the main lines and Post Officers being under the control of the Post Office Department; and in connection with these there are Thannah Dawks for the conveyance of letters to and from out-villages. There are three Post Offices in the District at Bancoorah, the Head-Quarter Station where the Deputy Post-Master of the Division resides, at Bishenpoor, and at Kotulpoor. All these are on the line of the old Trunk Road, along which communication is kept up by the regular Government Dawk-runners. In

Bancoorah the letters are distributed by Peons attached to the Post Office. But in the other two towns the letters, &c., are delivered by ticca (hired) men paid by the persons receiving the letters.

Letters for parties residing in villages at a distance from the Post Offices are generally forwarded to their destination through the Thannahs. Some are sent on for distribution by Chowkeydars, others by hired men who are paid by the recipients at certain fixed rates dependent on the distance they traverse. Neither of these modes appear to be very regular.

TAXATION, SOURCE OF REVENUE, AND PRODUCE OF EACH TAX.—The collections made in the District are, *first*, for Land Revenue; *second*, Abkarry Revenue; *third*, Chowkeydaree Tax.

1ST.—LAND REVENUE.

STATEMENT of Pergunnahs and Mehals with their Sudder and Thannahdaree Jummas.

Names of Pergunnahs.	Number of Pergunnahs.	Sudder Jumma.	Thannahdaree Jumma.	TOTAL.
		Rs. As. P.	Rs. As. P	Rs. As. P.
1. Pergunnah Bishenpoor ...	486	1,80,432 14 9¾	5,003 7 11	1,85,436 6 8¾
2. „ Barohazaree ...	1	1,96,012 9 0	.....	1,96,012 9 0
3. „ Kureesoonda ...	1	23,466 6 2	.....	23,466 6 2
4. Turruf Jungle Mehal ...	1	3,502 7 1	.....	3,502 7 1
5. Talook Koochiyakon ...	1	8,284 7 9	.....	8,284 7 9
6. „ Pachulla ...	1	408 9 9	.....	408 9 9
7. „ Jamtara ...	1	6,341 15 2	.....	6,341 15 2
8. Pergunnah Maleearah ...	1	5,276 4 9	.....	5,276 4 9
9. „ Saharjorah ...	1	3,110 0 5	.....	3,110 0 5
10. Kismut Saharjorah ...	1	1,156 10 3	.....	1,156 10 3
Total ...	495	4,27,992 5 1¾	5,003 7 11	4,32,995 13 0¾
2ND.—ABKAREE REVENUE ...				32,616 7 1
3RD.—CHOWKEYDAREE TAX ...				913 0 0
Grand Total ...				4,66,525 4 1¾

AGRICULTURAL IMPLEMENTS.—The agricultural implements in use are exactly the same as those generally used in and described in former Reports of the other Districts of Bengal.

DOMESTIC ANIMALS.—Cows and bullocks are kept for agricultural purposes, such as ploughing and treading out rice and for conveyance of produce in carts or on pack. A few buffaloes and goats are also kept in addition to the cows for dairy purposes. Dogs and cats abound as usual in every village.

POULTRY.—Fowls are plentiful, ducks and pigeons scarce.

WILD ANIMALS.—Bears are common in the jungly tracts; they are of small size, but generally very fierce, frequently attacking the wood-cutters and others passing through the jungles, without other provocation apparently than that of having had their haunts intruded on. Hyenas and wolves are seen occasionally. Jackals abound, and in the south-west leopards are not uncommon.

COST OF SURVEY.—The Survey of the District by the professional branch was effected at a total cost to the State of Rupees 38,653-9-1, or at an average of Rupees 28-10-4 per square mile, and of Rupees 12-10-2 per village circuit or hulkah.

CONCLUSION.—The truth of the work was tested by comparison of distances and bearing of the various Great Trigonometrical Stations in and adjoining to the District.

In this as in other Districts the inhabitants were at first impressed with the belief that resumption was the ultimate end in view; and, though this gradually wore off, they, with exceptions, never shewed any desire to facilitate the operations of the Survey. The exceptions were the Ghatwalls and Sonthals, who were not only anxious that the Native Surveyors should Survey their village boundaries, but begged them to Survey and lay down their small internal holdings also, putting up marks for this purpose most carefully; these generally were exactly the same as the village boundary marks, and were a source of no small difficulty and extra work to the unwary Native who allowed himself to be guided round the mehal, instead of the village boundaries.

CALCUTTA,
The 6th March 1863.

(Sd.) JAMES E. GASTRELL, *Lieut.-Col.*,
Revenue Surveyor.

LIST of Estates or Mehals constituting Sub-Divisions of Pergunnah Bishenpoor, District Bancoorah, furnished by Deputy Collector of Bancoorah with his letter No. 712 of the 14th April 1858.

No	Ashamee	No of Mehal	Annual Sudder Jumma	Ghatwallee Malgoojaree	TOTAL
			Rs. As. P	Rs As P	Rs As P
1	Pergunnah Bishenpoor ..	486	1,80,432 11 9¼	5,003 7 11	1,85,436 6 8¼
2	„ Barohazaree	1	1,96,012 9 0	....	1,96,012 9 0
3	„ Kureesoondi ..	1	23,466 6 2	....	23,466 6 2
4	Turruf Jungle Mehal ..	1	3,502 7 1	....	3,502 7 1
5	Tulook Koochecabun ..	1	8,284 7 9	....	8,284 7 9
6	„ Pachal ..	1	408 9 9	...	408 9 9
7	„ Jamtara .	1	6,341 15 2	....	6,341 15 2
8	Pergunnah Maleearah	1	5,276 4 9	....	5,276 4 9
9	„ Shaharjorah .	1	3,110 0 5	....	3,110 0 5
10	Kismut Shaharjorah ..	1	1,156 10 3	. .	1,156 10 3
		495	4,27,992 5 1¾	5,003 7 11	4,32,995 13 0¼

LIST of Schools in the District of Bancoorah.

No	Name of School.	Locality	No of Pupils on the Rolls	REMARKS
1	Bancoorah Zillah School .	At the Town of Bancoorah .	216	
2	Bishenpoor Anglo-Vernacular School ..	Bishenpoor ..	75	
3	Searsole Anglo-Vernacular School ..	Searsole ..	103	
4	Gopalpoor Anglo-Vernacular School .	Gopalpore ..	90	
5	Bishenpoor Government Vernacular School	Bishenpoor ..	64	
6	Rampoor Hameihatty Government Vernacular School ..	Rampoor Hameihatty ..	33	
7	Borah Aided-Vernacular School ..	Borah ..	80	
8	Radhanagur Aided-Vernacular School .	Radhanagur ..	74	
9	Kaksa Aided-Vernacular School	Kaksa ..	22	
10	Yanadighee Aided-Vernacular School	Yanadighee	98	
			855	

(Sd) JAMES E. GASTRELL, *Lieut.-Col.,*
Revenue Surveyor.

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STATISTICAL RETURN of Circuits of District Bancoorah.

Names of Circuits.	Area in Acres of							Number of Houses.													Population.						Remarks.
	Roads.	Jheels	Hills.	Jungles.	Tanks and Rivers	Mango Topes.	Sites.	Pucka.	Kutcha.	Total.	Temples.	Mosques.	Forts.	Indigo Factories.	Silk Factories.	Trigonometrical Great Station	Liquor Houses.	Thannahs	Police Chowkeys.	Hindoos.	Mussulmans.	Grand Total.	Cultivated or fit for cultivation	Waste.	Total	
Total of Circuit No. 1	267	169	—	4,719·38	5,894	731	2,222·99	91	9,783	9,874	174	4	1	8		...	9	1	7	44,496	4,874	49,370	75,787 32	13,271 37	89,0[illegible] 69	
Ditto of ditto No. 2	818	198	51	51,746·41	6,074	607	3,334	143	11,736	11,879	99	..	.	1	.	2	21	.	5	58,931	464	59,395	864,95·03	62,220·41	149,715 44	
Ditto of ditto No. 3	475	20	29	77,907·91	7,597	390	3,077 08	1,307	18,053	19,360	414	3	3	5	...	2	20	2	6	93,762	3,038	96,800	105,347·84	89,105·99	194,453·83	
Ditto of ditto No. 4	300		3	75,671	2,634	469	2,105	12	5,394	5,406	19	1	2	1	..	1	9	...	1	26,363	667	27,030	53,685·89	80,713·00	136,398 89	
Ditto of ditto No. 5	228	164		37,454	3,962	353	1,316	25	10,754	10,779	...	..	.	.		..				45,483	8,412	53,895	49,201·77	43,094·00	92,298 77	
Ditto of ditto No. 6	123	110	..	479	3,628	346	1,600	76	12,207	12,283	.	.	..	.	...	..	..	...	...	56,905	4,510	61,415	56,127 54	5,942 00	62,069·54	
Ditto of ditto No 7	268	.	25	27,590·20	10,394·10	952	3,810	86	18,032	18,118	331	5	1	2	1	1	11	1	6	67,613	22,977	90,590	98,271 30	42,077 30	140,348·60	
Totals ..	2,478	661	108	275,556·90	40,153·10	3,848	17,467·07	1,740	85,959	87,699	1,037	13	7	17	1	6	70	4	25	3,93,553	44,942	4,38,495	528,919 69	336,424 07	863,343 76	

CALCUTTA,
The 6th March 1863.

(Sd.) JAMES E. GASTRELL, *Lieut.-Col.,*
Revenue Surveyor.